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INTERNATIONAL CONSULTANTS, INC.
Success Through Innovation & Partnerships

Defining the Ocean Technology Sector

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Lessons Learned…

1. The ocean technology sector is not well defined or well understood:

*Marine technology

*Marine science & technology

*Maritime technology

*Naval technology

*Aquatic technology

The truth: This sector provides the ***enabling technologies*** for all of the above!

Ocean Measurement Technology (OMT)

Lessons Learned…

2. The OMT sector is primarily made-up of small (frequently micro) businesses:

- Limited resources
- Difficult to attract top-notch management talent
- Annual manufacturing/sales volumes relatively small
- Recent trend to scale-up OMT companies under much larger "umbrella" organizations via M&A

Lessons Learned…

3. The OMT sector is global in scope:

- Companies must become proficient in selling into the international market
- Must establish and maintain an international market presence
- Represents a difficult and sometimes daunting task for OMT business owners

Lessons Learned…

4. The OMT sector is highly competitive:

- Continuous product improvement and diligent marketing a must
- Frequent engagement required with customers and end-users
- Owners must stay “on top of their game” in running “nimble” and efficient operations keeping costs under control

Lessons Learned…

The OMT sector has *never* been so strategically important
to so many –
and for so many reasons!!

What is Driving the Market?

The increasing global awareness of the importance of knowing the current condition and in maintaining the long-term health of our oceans

Maintaining a Strategic Balance

The global oceans impact on human health and safety

In relation to

Society's impact on the health of the global oceans

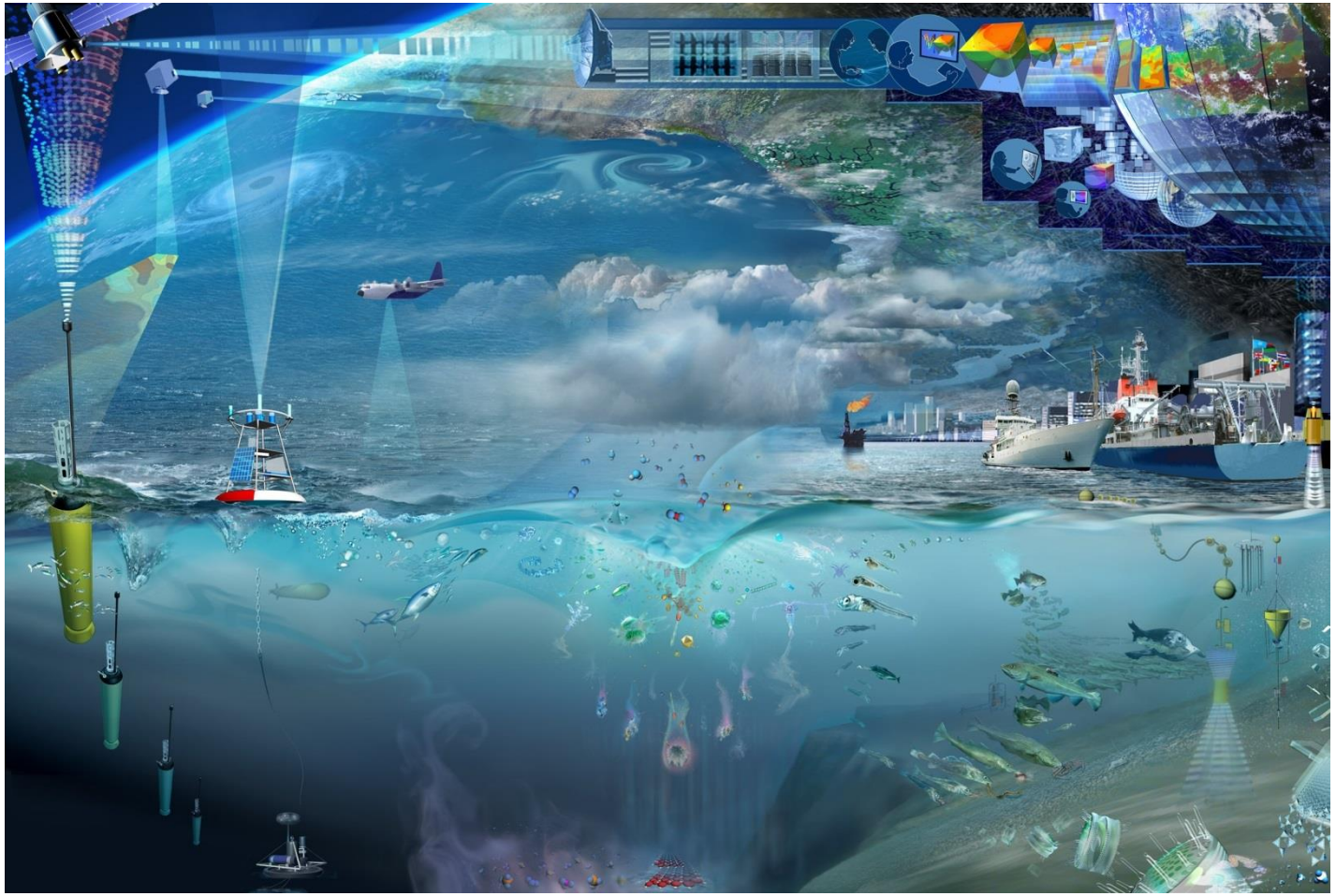
Emerging Societal Challenges

- Availability of fresh water
- Access to reliable, clean electric power
- Increased need for minerals and fossil fuels
- More effective warning of weather and seismic related events
- Sustainability of fisheries and aquaculture
- Problems caused by human habitation
- Increasing military defence of coastal and shallow oceans

What Role Does OMT Play?

- Measurement – Sensors
- Collection – Platforms
- Analysis – Samplers and Process Equipment
- Interpretation – Data processing & imaging
- Dissemination – Comms & Data Transfer

Ocean Measurement In Action



Market Trend Predictions

- Government sponsored R&D will continue to dwindle
- More large electronic systems integration companies will enter this space
- Markets in Asia, SE Asia and South America will begin to dominate over the next decade
- Market will increase its move toward unmanned, remote operation
- Many “technology gaps” solutions won’t come from this sector

Technology Gap Areas

- Visualization & imaging in difficult environments
- Keeping ship hulls, underwater sensors and instruments from bio-fouling
- Sustainable power sources for remote systems and sensors
- Detection and identification of microscopic particulate matter (biological & chemical)
- Smaller, low-power, sensors with increased capability (distance, signal level, clarity)
- Automated and timely water quality monitoring and alerting
- Adaptive ("Smart") systems and sensors for autonomous operation
- High-speed underwater communications with acoustics and/or lasers
- Simultaneous command and control of multiple in-water vehicles and sensor platforms
- Navigation and positioning of underwater assets using GPS
- Scalable, economic bio-fuel development using marine growth (algae)
- Data acquisition, processing and analysis in high-data rate scenarios
- Data sharing and distribution techniques to assure 100% connectivity
- Assuring port security in high-noise environments without false alarms
- Rapid, accurate oil spill evaluation for source identification and fate analysis
- Practical, affordable and sustainable ocean renewable energy sources
- Operation of complex and sensitive ocean sensor platforms and instruments under ice
- Dual-purpose autonomous manned vehicles for surface and sub-surface operations

The Hyper-Sub

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Thank You!

Questions?